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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/752,930      | 01/07/2004  | Ka Y. Leung          | CYGL-26,548         | 5789             |

25883 7590 03/31/2005

HOWISON & ARNOTT, L.L.P  
P.O. BOX 741715  
DALLAS, TX 75374-1715

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| EXAMINER |
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WAMSLEY, PATRICK G

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| ART UNIT | PAPER NUMBER |
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2819

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/752,930

Applicant(s)

LEUNG ET AL.

Examiner

Patrick G. Wamsley

Art Unit

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-25 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/24/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION*****Specification***

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

Claims 1-3, 5-6, 10, 14-16, 18-19, and 23 are objected to because of the following informalities:

- Claim 1, line 1: Change "convertor" to -- converter --.
- Claim 1, line 6: Change "select" to -- selected --.
- Claim 1, line 12: Change "non select" to -- non-selected --.
- Claim 2, line 2: Change "non-select" to -- non-selected --.
- Claim 3, line 4: Change "first section" to -- first array section --.
- Claim 3, line 4: Change "second array" to -- second array section --.
- Claim 3, line 10: Change "non-select" to -- non-selected --.
- Claim 5, line 2: Change "non-select" to -- non-selected --.
- Claim 6, line 2: Change "non-select" to -- non-selected --.
- Claim 10, line 1: Change "voltage driver" to -- common mode driver --.
- Claim 10, line 2: Change "common node" to -- first common node --.
- Claim 14, line 1: Change "convertor" to -- converter --.
- Claim 14, line 6: Change "select" to -- selected --.
- Claim 14, line 12: Change "non select" to -- non-selected --.
- Claim 15 line 2: Change "non-select" to -- non-selected --.
- Claim 16, line 4: Change "first section" to -- first array section --.

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Claim 16, line 4: Change "second array" to -- second array section --.

Claim 16, line 10: Change "non-select" to -- non-selected --.

Claim 18, line 2: Change "non-select" to -- non-selected --.

Claim 19, line 2: Change "non-select" to -- non-selected --.

Claim 23, line 1: Change "common node" to -- first common node --.

Appropriate correction is required.

### ***Allowable Subject Matter***

Claims 1-25 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the references of record neither reveal nor render obvious the recited combination including an analog-to-digital converter, hereafter ADC, having an array of switched capacitors coupled to two reference voltages on the basis of successive approximation register, hereafter SAR, control, having a comparator for redistribution of charge based on a common node.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,850,181 to Tsinker provides an ADC having SAR logic [110] and a switched-capacitor array [Figure 7] coupled to two reference voltages. U.S. Patent 6,288,664 to Swanson shows a SAR ADC having a capacitor array. U.S. Patent 5,606,320 to Kleks provides an ADC having a switched-capacitor array. U.S. Patent 5,235,333 to Naylor et al shows a SAR ADC coupled to a capacitor array. U.S. Patent 5,027,814 to Carroll et al. shows SAR logic [16] linked to an array of switched capacitors.

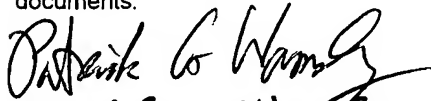
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This application is in condition for allowance except for the following formal matters: correction of minor informalities in the claims, as listed above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (571) 272-1814. The official facsimile number is (703) 872-9306. An alternate facsimile number, (571) 273-1814, should only be used for unofficial documents.

  
**Patrick G. Wamsley**  
**March 28, 2005**